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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,070	10/19/2001	Doug Azzarito	M-11651 US	3877
23640	7590	04/29/2004	EXAMINER	
BAKER BOTTS, LLP			PHAN, RAYMOND NGAN	
910 LOUISIANA			ART UNIT	
HOUSTON, TX 77002-4995			PAPER NUMBER	

2111

DATE MAILED: 04/29/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Page

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/036,070	AZZARITO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Raymond Phan	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

### **Part III DETAILED ACTION**

#### ***Notice to Applicant(s)***

1. This application has been examined. Claims 1-27 are pending.
2. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2111.

#### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

--Universal serial bus transaction processing tasks scheduling method for computer system, involves assigning transaction to periodic queue head list with faster polling interval--

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United

States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1-5, 714, 16-23, 25-27 are rejected under 35 U.S.C. § 102(e) as being anticipated by Leete (US No. 6,721,815).

In regard to claims 1, 10, 19, Leete discloses a method of scheduling USB transaction processing tasks comprising: configuring at least one periodic queue head list associated with a USB host controller (see col. 3, lines 10-27), wherein each of the at least one periodic queue head lists is configurable to be processed once every polling period (see col. 2, line 60 through col. 3, line 9); linking at least one of a plurality of entries in a frame list of the USB host controller to identify a corresponding periodic queue head list (see col. 2, line 60 through col. 3, line 27); and assigning a USB transaction processing task processed by the USB host controller to one of the at least one periodic queue head list (see col. 4, line 23 through col. 5, line 27).

In regard to claims 2, 11, 20, Leete discloses wherein each of the periodic queue head list describes a location of a list of the at least one USB transaction processing task scheduled to be processed during the polling period (see col. 4, lines 32-61).

In regard to claims 3, 12, 21, Leete discloses wherein each of the plurality of entries in the frame list is processed within a predefined time slot, wherein the plurality of entries of the frame list are consecutively processed from a first entry to an Nth entry, wherein the Nth entry identifies a Nth periodic queue head list, wherein a Nth polling period of the Nth periodic queue head list is defined as N time slots (see col. 4, line 23 through col. 5, line 55).

In regard to claims 4, 13, 22, Leete discloses further comprising: removing the at least one USB transaction processing task from the periodic queue head list

on determination that the at least one USB transaction processing task is no longer necessary (see col. 5, lines 7-18).

In regard to claims 5, 14, 23, Leete discloses wherein each of the plurality of entries in the frame list is linked to identify the corresponding periodic queue head list (see col. 2, line 60 through col. 3, line 27).

In regard to claims 7, 16, 25, Leete discloses further comprising: balancing USB transaction processing load by linking at least one unused entry included in the frame list to identify a new corresponding periodic queue head list (see col. 4, line 32 through col. 5, line 27).

In regard to claims 8, 17, 26, Leete discloses further comprising: balancing USB transaction processing load by linking at least one unused entry included in the frame list to identify the at least one periodic queue head list (see col. 4, line 32 through col. 5, line 27).

In regard to claims 9, 18, 27, Leete discloses wherein assigning the USB transaction processing task to one of the at least one periodic queue head list comprises matching a desired response time for the USB transaction processing task with the polling period of the at least one periodic queue head list (see col. 2, line 60 through col. 3, line 58).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 15, 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Leete in view of Wooten (US No. 6,272,499).

In regard to claims 6, 15, 24, Leete discloses the claimed subject matter as discussion above rejection except the teaching of the polling period for each periodic queue list is configurable as  $2^N$  milliseconds, wherein N varies from 1 to 10. However Wooten discloses the polling period for each periodic queue list is configurable as 2, 4, 8, 16, 32 ms (see col. 13, lines 3-57). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Wooten within the system of Leete because it would simplified data structures to the host controller thereby simplifying the operation of the host controller, minimizing memory access and size requirements.

### *Conclusion*

7. All claims are rejected.

8. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

**Meredith et al. (US No. 6,625,602)** disclose a method and system for hierarchical transactions and compensation.

**Garney (US No. 6,349,354)** discloses a method to reduce system bus load due to USB bandwidth reclamation.

**Fouquet (US No. 6,272,515)** discloses a method of scheduling distributed transactions.

**Shakkarwar (US No. 5,933,611)** discloses a dynamic scheduler for time multiplexed serial bus.

**Evoy et al. (US No. 5,958,020)** disclose a real-time event determination in a USB system.

**Miranda et al. (US No. 6,119,194)** disclose a method and apparatus for monitoring USB activity.

**Larson et al. (US No. 6,505,263)** disclose a bus controller operating code in system memory.

**Wang et al. (US Pub No. 2002/0116565)** disclose a USB host controller and interface with batched data transfer.

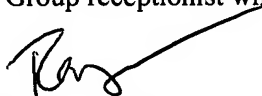
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (703) 306-2756. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (703) 305-9656 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

  
**Raymond Phan**  
4/22/04